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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/087,386	03/01/2002	Ken A. Nishimura	10004331-1	6282

7590 07/27/2005

AGILENT TECHNOLOGIES, INC.  
Legal Department, DL429  
Intellectual Property Administration  
P.O. Box 7599  
Loveland, CO 80537-0599

EXAMINER

TRAN, DZUNG D

ART UNIT	PAPER NUMBER
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2638

DATE MAILED: 07/27/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

**Office Action Summary**

Application No.

10/087,386

Applicant(s)

NISHIMURA ET AL.

Examiner

Dzung D. Tran

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 09 May 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-36 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 1-20 and 26-36 is/are allowed.
- 6) ☒ Claim(s) 21-25 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                                   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Specification*

#### *Claim Rejections - 35 USC § 103*

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 21-25 are rejected under 35 U.S.C. 103(a) as being unpatentable over Eskildsen et al. US patent no. 5,959,750 in view of Hayee et al. US patent no. 6,714,742.

Regarding claim 21, Eskildsen discloses a transmitter 82 for generating an optical multiplex signal suitable for transmission into an optical channel, the transmitter comprising:

a pseudorandom bit sequence (PRBS) generator (figure 4, element PRBS) for generating a plurality of independent PRBSs (col. 4, lines 52-54);  
a plurality of electro-optical modulators (66a, 66b, 66c, 66d, col. 4, lines 43-44) each coupled to the PRBS generator and disposed for modulating the polarization mode of optical signal according to the pseudorandom bit sequence PRBS to form a modulated optical signal (col. 4, lines 52-54, col. 5, lines 25-34). In figure 4, Eskildsen does not specifically disclose an **optical combiner** disposed at one end of the optical channel for combining a plurality of the modulated optical signals to form the optical multiplex

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signal for transmission through the optical channel. However, Eskildsen discloses a MZ modulator 83 encodes a pseudorandom bit sequence onto one (**or four**) of the four carrier wavelengths (col. 4, lines 51-54) then transmit the optical multiplex signal for transmission through the optical link 86 (see figure 4). Furthermore, Hayee discloses in figure 6, a polarization division multiplexing (PDM) 610 (equivalent to optical combiner) for multiplexing PDM wavelength  $\lambda_1, \lambda_2, \dots \lambda_M$  in to a multiplexed signal and transmit it through the optical link 603 (see figure 6) thereby producing a plurality of mutually orthogonal PDM signals (col. 2, lines 23-24).

It would be obvious to an artisan at the time of the invention was made to implement the MUX (equivalent to optical combiner) of Hayee in the system of Eskildsen in order to transmit a plurality of wavelength bands over a single optical fiber. Thus, it increases the capacity of the optical system over a single fiber and reduce cross-talk between the wavelength.

Regarding claim 22, Hayee discloses the optical channel comprises an optical Waveguide (col. 1, line 18).

Regarding claim 23, Eskildsen discloses the optical channel comprises a fiber optical channel 14 (col. 4, line 14).

Regarding claim 24, Hayee discloses the optical channel may be implemented in free space (col. 1, line 17).

Regarding claim 25, Hayee discloses the plurality of independent PRBSs are mutually orthogonal (col. 2, lines 23-24).

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3. Claims 1-20 and 26-36 are allowed.

### ***Response to Arguments***

4. Applicant's arguments filed on 05/09/2005 have been fully considered but they are not persuasive.

**A Rejection of claims 21-25 under USC § 103(a) as being unpatentable over Eskildsen et al. US patent no. 5,959,750 in view of Hayee et al. US patent no. 6,714,742.**

Applicant argues that the combination of Eskildsen and Hayee do not teach the newly added "thereby producing a plurality of mutually orthogonal PDM signals". However Hayee discloses in figure 6, a polarization division multiplexing (PDM) 610 (equivalent to optical combiner) for multiplexing PDM wavelength  $\lambda_1, \lambda_2, \dots \lambda_M$  in to a multiplexed signal and transmit it through the optical link 603 (see figure 6) thereby producing a plurality of mutually orthogonal PDM signals (col. 2, lines 23-24).

In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re*

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*Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, the motivation is based in in the knowledge generally available to one of ordinary skill in the art.

### ***Conclusion***

5. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

6. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Dzung D Tran whose telephone number is (571) 272-3025. The examiner can normally be reached on 9:00 AM - 7:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Kenneth Vanderpuye, can be reached on (571) 272-3078. The fax phone

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number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Dzung Tran  
07/21/2005



**KENNETH VANDERPUYE**  
**PRIMARY EXAMINER**